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Personality of the Convulsive Patient in Military Service

T. W. Richards*
Louisiana State University

INTRODUCTION

During 1945, at the height of World War II, there came to the U. S. Naval Hospital at San Leandro, California, a large number of patients about whom there was question of diagnosis of "epilepsy." At the suggestion of the medical officer in command of the hospital, Dr. W. F. Kennedy, an intensive study of these patients was made.

Three broad lines of investigation were established. First, each patient was given the usual *medical* examination. The neurological examination was particularly thorough; prominent among the special techniques used was the water Pitressin test. A second examination was *electroencephalographic* (hereafter referred to as the EEG); under resting conditions and following hyperventilation the electrical activity of the brain was measured; records were judged "abnormal," "borderline," and "normal." (A report of these medical findings has been published previously (9). The third type of examination was *psychological,* consisting of several procedures. Two questionnaires filled out by the patient were checked in interview with him. The psychological instruments which were applied include:

a. The Cornell Selectee Index (CSI). This scale, designed for screening at induction and recruiting stations, consists of 64 items concerned for the most part with subjective physical complaints.

b. A history blank, covering briefly items regarding parents, schooling, jobs, arrests, health, accidents, and military experience.

c. The Minnesota Multiphasic Personality Inventory (MMPI) (8). (The standard procedure used for the scale was modified slightly by eliminating from the total of 550 items the 250 which do not contribute toward a score.) This inventory asks that the subject decide about each of a number of statements whether it is "True" of himself or "False," and it allows him to express uncertainty or indecision by classifying the item "Don't know" or "?". Main variables of the MMPI in its original standardization were determined empirically on the basis of differences between "normals" and groups classified according to neuropsychiatric diagnosis. Thus, a scale designated as *Hy* is composed of items which distinguish between controls and a group of hysteric patients. Of these main variables, there are the following: *Hs* (hypochondriacal patients); *D* (depressive patients); *Hy* (hysteric patients); *Pd* (psychopathic deviate patients); *Pa* (paranoid patients); *Sc* (schizophrenic patients); and *Ma* (manic patients). Also, there is a scale, *Mf* (scored for *interests* similar to those of the sex opposite to oneself).

It is arranged that the raw scores for each of the variables of the MMPI may (by trans-

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Because of their participation in the analysis of special sorts of data, the author wishes here to thank Paul Greenberg, Winifred Ingram, and Jean Paulsen. He wishes to acknowledge a debt in particular to Natalie Kettleman, whose dissertation (10) was concerned with the Rorschach data.

mutation into *t* scores, where the mean equals 50 and one sigma equals 10 points) be plotted on a chart. Any patient may be compared easily with the norms by means of this chart.

d. Parts of the Wechsler-Bellevue Intelligence Scale (W-B) (21). This included for most patients five tests of the Verbal Scale (Information, Comprehension, Arithmetic, Digits, and Similarities) and the Block Designs Test of the Performance Scale.

e. The Rorschach ink blot test, administered and scored according to the method of Klopfer (11).

f. The Thematic Apperception Test (TAT). This was used in a brief form involving ten pictures of the revised series of Morgan and Murray (13): No. 3BM, 4, 6BM, 7BM, 9BM, 12M, 13MF, 14, 17BM, and 18BM.

Supplementary to this routine battery of psychological tests, several other tests (the Healy Pictorial Completion II and the Shipley-Hartford Retreat Scale) were used selectively in individual cases.

The present report concerns the performance of the convulsive patient on the psychological tests, and the implications of the findings for the theory of personality in general and of the personality of the convulsive patient in particular.

It will be found that this report is organized about a conceptual scheme which emphasizes Capacity, Control, and Motivation. The concepts of these three general areas of behavior have been found useful in accounting for personality and its organization (17). The notion of *Capacity* is intended to include those aspects of the personality involved in productivity and potentiality and any discrepancy between the two. *Control* is suggested as a concept to include those methods of dealing with reality which the individual has developed through his unique experiences. This would involve much of what is known in other framework as ego psychology, for it has to do, so far as emotionality is concerned, with *methods of defense* against anxiety or threat. The third category, *Motivation*, refers to basic impulses—needs and threats which initiate the individual to adjust—to demonstrate capacity and control.

The group studied. The material presented here was obtained between January and August, 1945, from a group of 72 men in naval service. They ranged in age from 17 to 43 years, with a median of 23.4 years. Length of service (in the Navy or Marine Corps) varied from 6 months to 7 years, with a median of 2.2 years. Three patients had completed college; 24 (one-third) were high-school graduates. Only 11 men had less than full grade-school education. All but 2 men had been overseas, and more than one-half (54 per cent) had been in combat, almost exclusively in the Pacific area, as Marines (ground troops), or as sailors aboard ship. About one-half of the men (47 per cent) had been married at least once. In 5 cases (7 per cent) there was instance of either definite separation or divorce. The fact that these men had a record of active duty over a considerable period of time is important, since most studies of "epileptic" patients utilize hospitalized cases of long standing.

In response to the question, *Was your family broken up by divorce or death of parents before you were 16?*, 21 patients answered in the affirmative. This represents 29 per cent of the group. Of these 21 cases, 5 reported divorce or separation; 7 indicated death of the mother; and 9 death of the father. In 3 of these instances, the father had been killed.

Neurophysiological findings. Medical findings established the following points (9): (*a*) A history of seizures prior to enlistment was elicited in 47 per cent of the total group. The age of the first seizure ranged from infancy to 42 years.

(*b*) While 59 per cent of the group gave a history of head trauma of varying degrees of severity, the neurologist felt that "no individual in this series had seizures which suggested very strongly a relationship to head trauma" (9, p. 2).

EEG study of the total group of 72 patients revealed tracings which to the encephalographer were "abnormal" in 32 cases (46 per cent), "borderline" in 19 (26 per cent), and "normal" in 21 (29 per cent). In summary, he may be quoted as follows:

> There was nothing consistent in the character of the abnormal EEG's. Most of them contained slow cycles of varying frequencies and about one-fourth had organized rapid cycles (frequencies between 18 to 30 cycles per second), usually with slow activity. In only 1 of the 73[1] cases was a typical spike and wave pattern obtained. Yet several of the patients had *petit mal* attacks, although all but three had *grand mal* seizures also (9, p. 3).

Relevant previous research. The report of Lisansky (12) in 1948 summarizes the research studies of the personality of convulsive patients. Test findings obtained by means of the Rorschach test by Rorschach (18), Guirdham (5), Stauder (19), Harrower-Erickson (7), and Arluck (1) fail in general to support the concept of an "epileptic personality." Lisansky's own research, which compared ten epileptics and ten diabetics matched roughly for age, educational achievement, age of onset, and duration of illness suggested that the epileptics had lower W-B performance IQ (99.5 compared with 105.7 for the diabetics). With the Rorschach their response time was longer and they demonstrated more of the "neurotic signs" of Klopfer, "more emotional strain and less acceptance of self than does the diabetic group . . . . On the whole, however, the groups show far more similarity than differences" (12, p. 37). Lisansky comments on the lack of studies of noninstitutionalized, nondeteriorated adult patients using projective personality test.

[1] The electroencephalographer included in his total group one case additional to the group given psychological tests.

INTELLECTUAL CAPACITY OF THE CONVULSIVE PATIENT

It was pointed out that only 11 patients, or 15 per cent, had less than complete grade-school education. One-third had finished high school, and 3 men (4 per cent) were college graduates. This leaves a group of 53 per cent who had some high-school education, but did not graduate. A number of these men left school to enter the service. On the grounds of schooling alone, then, it is clear that we are dealing with a group which is of at least average intellectual competence.

Discussion of the results of performance on tests of mental ability will be confined for the most part to the Wechsler-Bellevue Scale (hereafter referred to as W-B), and more specifically, to six of the ten subtests of this Scale. These are the five verbal tests (Information, Comprehension, Digit Span, Arithmetic, and Similarities) and a single performance subtest, Block Designs. Furthermore, since the performance of only 59 of the total group of patients was sufficiently beyond suspicion to qualify it for research evaluation, this discussion will be limited to the results obtained with a portion (82 per cent) of the total group.

Intelligence quotients for the full scale (five verbal tests and block designs) ranged from 57 to 132, with a mean of 98.3, a standard deviation of 17.0. The mean is close to that for the general population, but variability for the convulsive group is greater, although

the difference is not significant statistically.

The pattern of performance. An analysis of the group results with subtests of the W-B indicates slight superiority of the performance (in this instance the Block Design test) over the verbal tests. However, the difference is not significant statistically. Examining this trend in somewhat greater detail, reference may be made to Figure 1. This represents for each subtest, in terms of weighted scores (whereby the normative mean is at 10 and sigma is set at 3 points), the central tendency and variation within one sigma for the standardization data furnished by Wechsler (21) on adults of comparable age, and for the group of convulsive patients.

It is seen that the convulsives differ from the controls most in their poorer performance with Arithmetic and with Digits; these are differences significant at the .01 level of confidence or better. The difference for Information (with the convulsives again being less apt) is at the .05 level. Differences for the remaining subtests—Comprehension, Similarities, and Block Designs—are negligible. Three patients achieved IQ scores below 70—namely, 57, 62, and 62. History in each case, together with supplemental testing, seemed to reinforce the impression of borderline mental deficiency. In two cases the EEG was considered "normal," in the third, "borderline."

The concept of "deterioration." In the literature on epileptics or convulsive phenomena there is considerable tendency to regard such behavior as reflection of "organic" defect or impairment. With this idea in mind, there was calculated

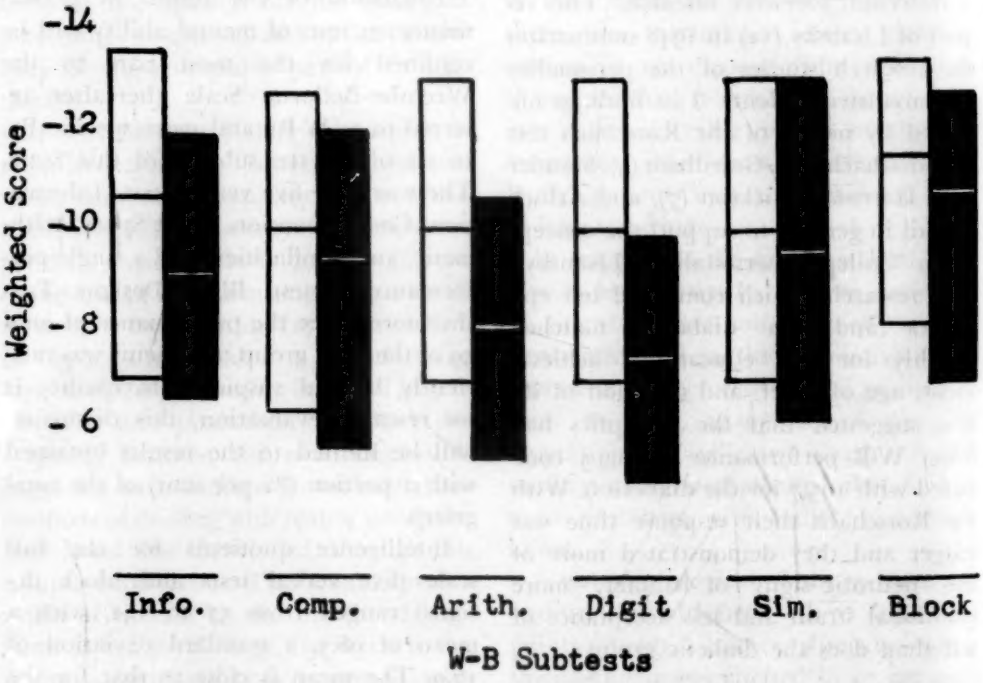

FIG. 1. Comparison of Convulsive Group (Shaded) with Wechsler's Standardization Group of Adults (Open), after Transmutation from Raw to Weighted Scores.

for each of the convulsive patients an index of "loss" according to the procedure proposed by Wechsler. Because, in this study, only certain of the Wechsler subtests were used, the following formula was adopted for use with equivalent scores on the subtests:

$$\frac{(\Sigma \text{ Information} + \text{Comprehension} \times \frac{5}{3}) - (\Sigma \text{ Arith, Digits, Simil, Block Des} \times \frac{5}{4})}{(\Sigma \text{ Information} + \text{Comprehension} \times \frac{5}{3})}$$

As this index is proposed, the greater the per cent "loss," the greater is the patient presumed to be deficient in those abilities (as measured by Arithmetic, Digits, Block Designs, etc.) which decrease normally with advancing age, and with "organic" deterioration. It is suggested by Wechsler that when the percentage of "loss" is 20 per cent or more, "organic" impairment may be suspected.

Thirty-seven per cent of the convulsive patients show no loss; 46 per cent show loss within the 1 to 20 per cent range which Wechsler regards as inconclusive evidence of "organic" pathology. The remaining 17 per cent of the patients demonstrated loss of 20 per cent or more —indices ranging from 22 per cent to 38 per cent.

Comparison of EEG evaluations for the "loss" group of 10 cases and for the total group of 72 cases shows little difference between the groups.

EEG	Per Cent Total Group	Per Cent Loss Group
Abnormal	47	40
Borderline	24	20
Normal	29	40

With no effort toward determination of the statistical significance of the differences between these groups, it seems to be clear that the "loss" patients are no more inclined toward pathological EEG records than convulsive patients in general, who show, to be sure, a relatively high frequency of "abnormal" EEG records.

Discussion. Performance with tasks involved in mental tests, chiefly those of the W-B Scale, indicates that the group of convulsive patients we are studying here does not differ greatly, so far as total IQ is concerned, from the "normal" standardization group. Their performance in certain tasks (mainly Arithmetic and Digits) is significantly less competent compared with their performance otherwise and with the performance of the "control" (standardization) group.

On the basis of his studies of various types of patients at the Menninger Clinic, Rapaport (16) found that patients, whatever their psychopathology, are likely to show in their performance with the W-B verbal tests a deficiency in Arithmetic and Digits particularly. To him, Arithmetic and Digits are "more vulnerable to maladjustment" (16, p. 166). He feels that within the W-B battery of subtests these two tests (in which our convulsives are deficient) are unique in this respect: they have to do with the subject's *relation to reality*. The Digit test, he believes, is a test of *attention*, by which he means "an effortless, passive, unhampered contact with outside reality—a free receptivity" (16, p. 168). Thus the subject who, like many of our convulsives, is low on Digit Span is incapable of this easy, spontaneous relationship to the reality of his environ-

ment. In further discussion Rapaport maintains that the ability to attend is in inverse proportion to the presence of anxiety.

Like the Digit test, Arithmetic also measures the patient's contact with reality, according to Rapaport, but "in contrast to attention (measured by the Digit Span test) concentration (which is measured by Arithmetic) may be characterized as an *active* relationship to reality" (16, p. 168). "Attention then may be regarded as automatic, concentration as voluntary[2] effort" (16, p. 169).

If Rapaport's interpretation of the psychological significance of W-B subtests is valid, we might conclude that the relationship to reality of these convulsive patients is poor. It seems likely that anxiety prevents these patients from giving attention—it reduces their receptivity, and this, in turn, reduces their efficiency in handling problems intellectually. They possess the capacity for more effective function than they demonstrate, and this is because their private worries reduce stimulation from the outside, and hence the facility to mobilize abilities for optimal performance.

CONTROL IN THE CONVULSIVE PATIENT

Personality Structure As Revealed in Test Performance

In this phase of the report comparison will be made with data obtained from "normals" to reveal the extent to which the convulsive patients as a group seem to utilize particular kinds of adjustment. Here we shall depend largely on data obtained by means of the MMPI and the Rorschach test.

In Figure 2, mean scores for the MMPI are plotted on a chart designed to compare any group (or patient) with the scores obtained for control subjects of either sex. In this instance the convulsive patients are compared with 293 subjects for *Pa* and *Pt;* 117 for *Mf;* 294 for *Hs, D, Sc,* and *Ma;* and 345 for *Hy*. These designations are explained on page 1. Variability of the patient group is indicated by horizontal lines drawn at plus and minus one standard deviation from the mean.

Figure 2 shows that the convulsive patients demonstrate greater variability in almost all of the main variables of the MMPI; this is most true of *D, Hs, Sc,* and *Hy*. Statistical comparison of the convulsive group with the control group shows (at the .01 level of confidence) increased scores for the former in *D, Mf, Hy, Hs, Pt,* and *Sc;* and (at the .05 level) in *Pd*. Differences for *Pa* and *Ma* are insignificant.

The results indicate that, when compared with the group of controls on which the MMPI was standardized, (*a*) on all main variables, the convulsive patients as a group have mean scores greater than the controls; (*b*) deviation of the convulsive group is *least* for variables *Pd, Pa, Sc,* and *Ma*—variables related in general to *psychotic* nosology; it is *greatest* for *D, Mf, Hy, Hs,* and *Pt*—variables related in general to *neurotic* nosology; (*c*) apparent exceptions to this general conclusion are *Pd (psychopathic deviate), D* (related presumably to *depression),* and *Mf* (tendency to react in ways similar to the opposite sex).

It is our feeling that much of the con-

[2] Rapaport adds that "It should be clear that in using the expression 'voluntary' we [refer not to] an independent psychological force, such as in the past has been termed 'will' [but] rather to the energy freely available to the individual for disposal in intellectual processes in contrast to specifically-deployed energies which are not so available" (16, p. 169).

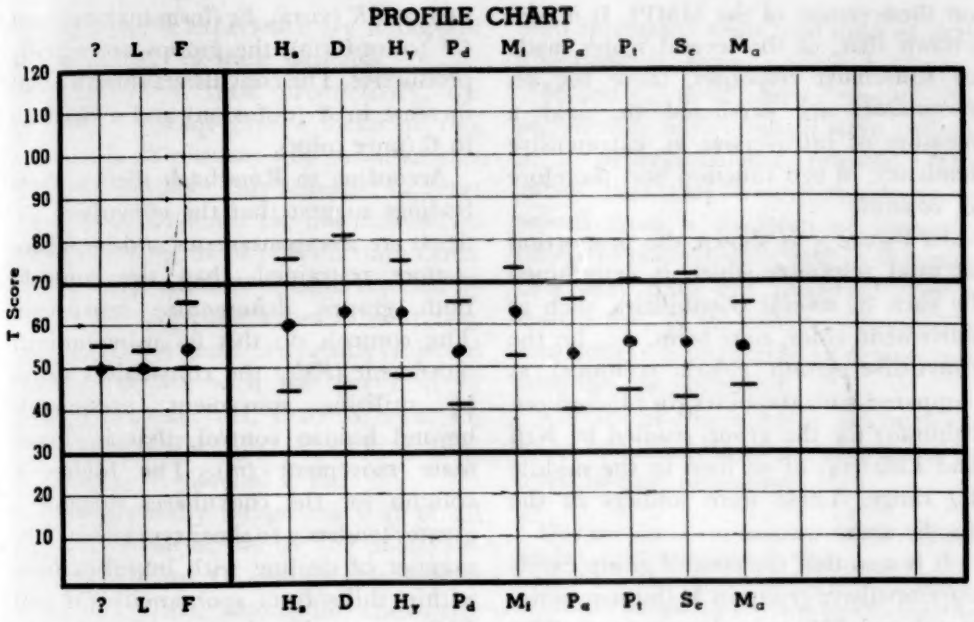

FIG. 2. Comparison of Convulsive Patients (Mean Represented by Dot, $\pm$ 1 σ by Horizontals) with the Male Standardization Group, in Terms of *t* Scores.

tent of the *D* scale of the MMPI reflects depression of a mild, nonsuicidal, and nonpsychotic nature, and is therefore neurotic. Regarding *Mf*, a tendency for men to react feminine-wise is consistent with a neurotic (extratensive) adjustment rather than a psychotic (introversive) one. (This will be discussed further in connection with item analysis of the MMPI.) Somewhat the same reasoning is involved regarding *Pd;* this represents a masculine sort of psychopathology, less extreme than *Pa* and *Sc* but in the same direction (away from neurosis, and toward psychosis). Differences between sexes for the standardization groups show that normal control females give higher *D* scores and lower *Pd* scores than control males, a point which bears out the suggestion above.

These results show that in the MMPI situation the convulsive patients behave in a manner less like that of the control men than of the control women. In fact, the mean scores for the convulsive patients (with the exception of *Mf*) are very close on all MMPI variables to the mean scores for normal control women.

A general conclusion from these data regarding scores for the main variables of the MMPI is that the convulsives tend toward psychopathology, particularly of an extratensive, feminine, and neurotic sort. Indeed, the profile for the group of convulsive men is much more like that of normal women than that of normal men, if we exclude the measure of *Mf*, or masculinity-femininity itself. However, the convulsives demonstrate greater variability than the standardization group. The fact that they are less homogeneous than the control group argues against the concept of an "epileptic personality" type.

Data provided by the Rorschach performance provide an interesting check

on these results of the MMPI. It is well known that, of the several scores made of Rorschach responses, those for *determinants* are presumed to yield a measure of introversive vs. extratensive tendency, of ego function and therefore of *control.*

In Figure 3 is shown the proportion of total responses which is determined by each of several possibilities, such as movement, color, pure form, etc., for the convulsive group (black columns) as compared with responses (in blocked out columns) for the group studied by Neff and Lidz (14) of 38 men in the middle IQ range. These were soldiers in the Pacific area.

It is seen that the control group excels the convulsive group in *M* (human movement) and *FM* (animal movement). The convulsive group excels the experimental group in *m* (inanimate movement), in *k* (third-dimensional responses), in *F* (pure form), in *C′* (black-or-white as color), and in *FC* (form-color). For determinants such as *FK* (vista), *Fc* (form-texture), and *CF* (color-form), the groups are equally productive. The convulsives show a small increase in *K* (diffusion) and a decrease in *C* (pure color).

According to Rorschach theory, these findings suggest that the convulsive patients are less spontaneous and impulsive —more restrained—than the controls. Both groups *dehumanize* movement. The controls do this by using animal movement (*FM*); the convulsives do so by utilizing movement presumably beyond human control, that is, inanimate movement (*m*). The higher *F* column for the convulsives suggests a greater tendency to sheer repression. The manner of dealing with impulses from within shifts from spontaneity (*M* and *FM*) to *m* and to *k*, a tendency for the convulsive patients to intellectualize and depersonalize. As far as social spontaneity is concerned, the shift from color (notably *C* and *FC*) to shading or achromatic color (*C′*) suggests that depression

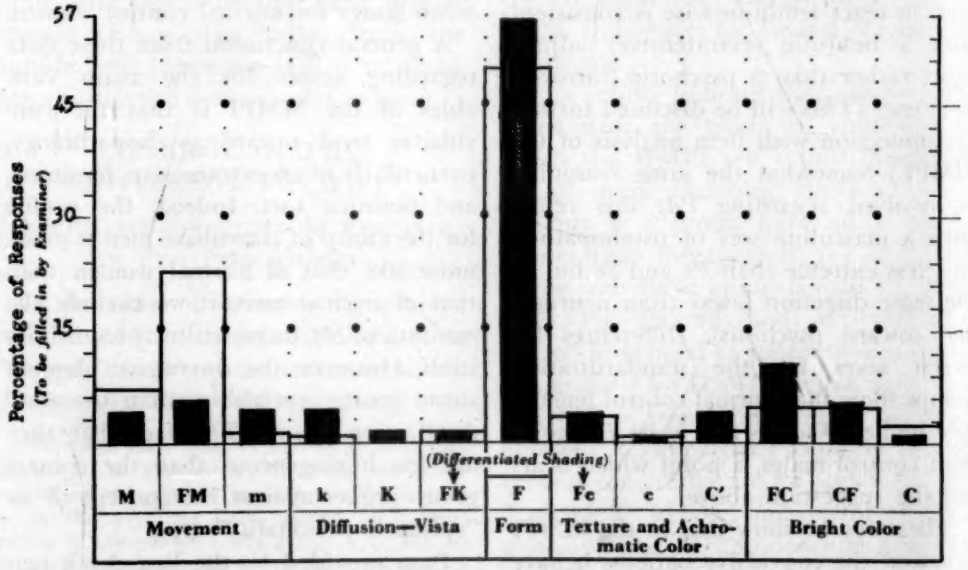

FIG. 3. Comparison of Convulsive Patients (Black Column) with Control Subjects of Neff and Lidz (Open Column) on Rorschach Determinants.

and traumatic experience are important in the history of these patients.

In terms of total productivity, the convulsive group gave a mean of 10.3 responses, in contrast to a mean of 14.2 for the controls. This reflected in great measure a tendency for the convulsives to see nothing, or to reject certain cards. The average number of cards rejected by the convulsive patients was almost two. In order, the most frequently rejected cards, together with the per cent of rejections, were: VII, 32.0; IX, 29.2; VI, 26.4; X, 20.8; III, 19.4; IV, 18.1; II, 16.7; VIII, 12.5; V, 5.6; and I, 1.4.

It is generally recognized that of all Rorschach cards, IX is the most frequently rejected. Of considerable interest is the fact that, among the convulsive patients, Card VII (presumed by many to be the "mother figure") was rejected more frequently than IX, and that it was rejected much more frequently than was IV (the "father figure"). Also of interest is the fact that VI (the "sex" figure) was third in order of rejection. These possibilities are considered in greater detail in the following discussion of *motivation.*

MOTIVATION IN THE CONVULSIVE PATIENT

The Concept of Self

The patient's present situation. It should be obvious that we are dealing here with individuals under a special set of circumstances. In the first place, they are in military service, during a period of intensely active warfare, and with no indication of an end to hostilities. Many of these men had been on active duty for several years. They had been away from home, practically all of them outside the continental limits of the United States. More than half had been in combat areas, and most of these under combat stress.

Secondly, these men (during the period they were studied) were patients in a neuropsychiatric hospital. This means that they were temporarily removed from a situation of imminent orders to combat duty, and in this sense they may have felt protected. For at least a few, as we shall see, hospitalization meant a challenge to demonstrate adequacy or normality.

Certain of the items in the questionnaire administered to the men are of interest in this connection.

Why are you in the hospital? Twenty-six men (36 per cent) write simply "Epilepsy" or "Epileptic." For these men, this single concept seems to account adequately for their present situation. Another 15 men (21 per cent) use the term "epilepsy" or "epileptic" together with some elaboration. Examples are: "Epilepsy (they say)," "Suspicion of epilepsy," "Diagnosis is epilepsy (Jacksonian)," "I'm in the hospital at present because I'm believed to have epilepsy." This second group, who elaborate somewhat on the word "epilepsy," betray at least some doubt that the single diagnostic term will suffice as an accurate statement. One patient writes: "For drinking too much whisky, causing me to pass out; they have me in for epilepsy." Another omits the term epilepsy, but states: "Because I passed out. People who saw me said it was a fit. I don't know, outside of feeling a little groggy afterwards, I feel all right."

Over half the patients, then, bring in the word "epilepsy" in accounting for their hospitalization. Ten more use terms just as simple, such as "blackout spells," "hazy spells," "unconscious spells," "fainting spell," "for passing out," etc. Only a minority discuss their hospitalization subjectively, i.e., in terms of the experience which led to medical attention. Illustrations of these are: "I have fainting spells and don't know what happens," "Because I had a fit while working," "For passing out, reason I don't know."

A conclusion from the characteristic answers to this question about the reason for hospitalization is that these men regard themselves as *having something* (namely, "epilepsy"). They are in the

hospital not so much because they need help or need study, but because they have been diagnosed as epileptic. Not all the patients are willing to accept this diagnosis, but most realize that it has been, or may well be given them. In evaluating themselves in this way they use not their own but an outside frame of reference.

A second item in the questionnaire asked *How soon do you think you should go to duty?* followed by *What type of duty do you prefer?*

Twenty patients (38 per cent) either gave no answer or said "don't know." Ten men (14 per cent) wrote "Never" or some other form of definite negative answer. Nine wanted duty limited to the U.S. ("stateside"). One man wrote the words "As soon as I am" and crossed them out. A quite different group of 16 men (22 per cent) were outspoken in asking for duty immediately: "Any time, repair ship"; "To the battle zone." An extreme illustration of this is M. R., who wrote as his preference, "Hazardous duty in underwater demolition team."

A third group of patients, 14 in all (19 per cent), leave the matter of returning to duty up to the Navy or the hospital: "When the cause of my spells has been determined, flying or aircraft maintenance"; "Whenever the doctor advises, hospital work"; "When the doctor says I am well"; "Up to the doctor, wherever I am put"; "When cured"; "Go any time when doctor thinks so"; "To duty when I am cured of what I got"; "Combat duty, when proven I haven't got it [epilepsy]."

These replies indicate that a group of men hospitalized for convulsive phenomena have a range of attitude about further active duty, with a larger proportion than one might expect expressing preference for active and even combat duty immediately, or "as soon as the doctor says so." There seems to be a high degree of motivation in a sizeable number of these patients to demonstrate that they are not inadequate or incapacitated by "epilepsy," whether they "have" it or not.

Replies to personality questionnaires. One of the test instruments used with these patients was the Cornell Selectee Index. In order to have some basis for comparison, the replies of the convulsive group are presented in Table 1 in terms of the proportion answering "Yes" to each question together with the proportion found characteristic of a group of 325 penitentiary prisoners studied by Wickersham (22). Only those items are presented on which the groups differed with statistical significance at the .01 level of confidence.

Comparing the penitentiary with the convulsive population, we see that the former (as might be expected) have been to reform school, have been arrested, have gotten in trouble because of drinking, drink heavily, and have been in mental hospitals. None of these is true of the convulsives. The prisoners have a less stable work history. The prisoners complain more of constipation and, though the difference is less than 10 per cent, of other somatic difficulties like vomiting blood, stammering, uneasiness, urinating in public, pain in the eyes, and nervous breakdown. More of the prisoners can do good work while others are watching, and more of them have a good appetite.

Naturally the convulsive patients complain more of fits, fainting spells, and dizziness. They complain more of tiring easily, of fatigue on waking, of severe headaches, of pressure or pain in the head. Also, the patients regard themselves much more as worriers. They find it hard to forget an unpleasant experience, and more of them have the feeling of being watched while at work.

These contrasts would suggest that the convulsive patient is more subjective, more neurasthenic in his self-preoccupation than is the prisoner. He is more aware of bodily sensations, such as cold hands or feet, twitching of the

TABLE 1

DIFFERENCES BETWEEN CONVULSIVE GROUP AND GROUP OF 325 PENITENTIARY PRISONERS CERTAIN ITEMS CORNELL SELECTEE INDEX

Questions	Per Cent "Yes"	
	Convulsive Patients	Prisoners
Have you ever had a fit or convulsion?	75	6
Do you frequently get up tired in the morning?	69	45
Do you find it hard to forget an unpleasant experience?	58	40
Do you often shake or tremble?	45	22
Do you get tired easily?	44	30
Do you worry about your health?	44	26
Do you often have spells of dizziness?	44	18
Are you easily upset or irritated?	44	24
Have you been troubled with shyness?	44	26
Do you get spells of exhaustion or fatigue?	43	21
Do you sometimes have nightmares?	41	23
Do you often have pressure or pains in the head?	40	19
Have you at times had a twitching of the face, head, or shoulders?	37	22
Do you frequently feel faint?	33	14
Do you suffer badly from frequent severe headaches?	33	18
Have you had more than five jobs in the last two years?	7	20
Have you been arrested more than three times?	6	65
Were you ever a patient in a mental hospital?	3	15
Has any doctor ever told you you had ulcers of the stomach?	1	6
Do you drink more than two quarts of whiskey a week?	1	22
Have you ever gotten into serious trouble or lost your job because of drinking?	0	26
Do you use dope regularly?	0	8
Were you ever sent to a reform school?	0	38

head, face, or shoulders, trembling, fatigue, and general irritability. Nevertheless, 73 per cent of the convulsives feel well and happy, 81 per cent make friends easily, feel that they are usually treated fairly.

A second test instrument utilizing the questionnaire method, the MMPI, consists of items related not only to somatic complaints, but to a variety of interests and activities as well. Items of the inventory[3] on which the convulsive group answered "True" in significantly greater proportion than the "normal" standardization group ($N=139$)[4] are presented in Table 2 and Table 3. The criterion of significance is a difference at the .01 level of confidence or better.

A glance at the pattern of differences between the convulsive patients as a group and the normal group reveals certain major areas of importance in the psychology of these patients.

a. Understandably, the convulsive patients are much more inclined to admit dizzy and fainting spells and fits and convulsions than are the controls. They report head complaints with much greater frequency.

b. They feel generally less adequate. They are less sure of their memory, their judgment, their ability to concentrate; they have a greater tendency to forget what people say.

c. In greater frequency also, the patients report subjective phenomena such as hot spells, dermal sensations of burning and itching, ears ringing or buzzing.

d. Their sleep is much more troublesome than is that of the controls. This includes more dreams, nightmares, and sleepwalking, as well as insomnia, sensitivity to wakening, etc. Fewer of them feel well rested in the morning.

e. The patients tire more quickly, are less able to work.

[3] It is important to consider that only those items of the MMPI were used which contribute toward a score for one of the main variables.

[4] The author wishes to thank Dr. Starke Hathaway for his kindness in submitting data on the standardization group.

TABLE 2

MMPI ITEMS ON WHICH THE PROPORTION OF CONVULSIVES ANSWERING "TRUE" IS SIGNIFICANTLY GREATER THAN THAT OF CONTROL SUBJECTS

Statement	Per Cent Answering "True"	
	Convulsive	Control
Any man who is able and willing to work hard has a good chance of succeeding.	100	89
I would rather win than lose a game.	99	87
I have often had to take orders from someone who did not know as much as I did.	63	42
I have periods of such great restlessness that I cannot sit long in a chair.	60	37
Sometimes I become so excited that I find it hard to get to sleep.	60	33
I frequently notice my hand shakes when I try to do something.	57	27
Parts of my body often have feelings like burning, tingling, crawling, or like "going to sleep."	53	23
I forget right away what people say to me.	32	12
Most of the time I feel blue.	30	5
I cannot keep my mind on one thing.	29	13
Much of the time my head seems to hurt all over.	27	4
I have had periods in which I carried on activities without knowing later what I had been doing.	27	9
Often I feel as if there were a tight band around my head.	23	5
I feel weak all over much of the time.	21	6
I have nightmares every few nights.	21	5
I have the wanderlust and am never happy unless I am roaming or traveling about.	21	6
I find it hard to keep my mind on a task or job.	21	7
Once a week or oftener I become very excited.	20	6
I dislike having people about me.	19	4
At times I have fits of laughing and crying that I cannot control.	13	2
Once a week or oftener I feel suddenly hot all over, without apparent cause.	13	2

f. There is a slight suggestion of confusion, in that more of them report that things sometimes seem unreal, their thoughts race ahead. A small but significantly greater percentage "commonly hear voices without knowing where they come from" (11 per cent vs. 3 per cent).

g. The patients are less inclined to report strong attraction to members of their own sex. They are less fond of recalling "Alice in Wonderland" and playing "Drop the handkerchief." Also, they are less willing to grant sexual freedom to women comparable to that enjoyed by men.

h. On the whole, the patients give a picture of conscientiousness, competitiveness, and absence of humor. More of them worry about their health than do the normals, but fewer have financial and other worries.

Projection of the self in fantasy. Rorschach theory suggests that the individual's concept of himself is best revealed in the *movement* response. Reference to Figure 3 (p. 8) indicates that, including human, animal, and inanimate movement, the convulsive patients use little (40 per cent of them use none). Piotrowski feels that movement (particularly human movement) represents a concern on the part of the patient for the *future*—for future possibilities. Absence of movement in this group of convulsives suggests *caution*, an unwillingness to use the Rorschach situation expressively; it may be inferred that the patients are, as a group, repressed and confused as to their role in life. However, it is interesting and pertinent to examine in some detail the *nature* of movement responses which appear in 60 per cent of the records.

Human movement (the most spontaneous form of all) was used by 22 subjects (30 per cent). Of the total number of human-movement responses, 64 per cent

were in response to Card III, which is regarded by all Rorschach workers as most provocative of the human-movement response. These responses are:

two people picking up something
two people working
two persons, kind of bending over
two people, but I don't know they're doing . . . bending down (trying to jitterbug)
couple of people sitting over a fire . . . their hands, trying to keep warm
two persons standing close to a fire, like warming their hands
child's drawing of a couple of (colored) people (leaning)
a design of people doing some kind of a dance
two people pulling something
two men pulling something
couple of people doing a dance together—dancing team
waiters arguing over a spilled tray
two people doing something
two people pulling on something . . . trying to get it away from each other. Could be a man, they both look like women
two men trying to pull something apart
form of two people, fighting, pulling away from each other
two people washing clothes
two people doing *anything*

Of the remaining Rorschach cards, three (Cards I, VI, and VIII) produced no human movement; Card IV produced

TABLE 3

MMPI ITEMS ON WHICH THE PROPORTION OF CONVULSIVES ANSWERING "TRUE" IS SIGNIFICANTLY LESS THAN THAT OF CONTROL SUBJECTS

Statement	Per Cent Answering "True"	
	Convulsive	Control
I like to visit places where I have never been before.	81	95
I seem to be about as capable and smart as most others around me.	80	94
I am about as able to work as I ever was.	73	91
I believe women ought to have as much sexual freedom as men.	70	88
I have little or no trouble with my muscles twitching or jumping.	66	88
My hands have not become clumsy or awkward.	66	86
I hardly ever feel pain in the back of the neck.	64	86
I do not often notice my ears ringing or buzzing.	63	81
My judgment is better than it ever was.	63	87
My daily life is full of things that keep me interested.	61	91
I am always disgusted with the law when a criminal is freed through the arguments of a smart lawyer.	61	83
I believe I am no more nervous than most others.	60	83
I am neither gaining nor losing weight.	60	86
I daydream very little.	59	79
I do not tire quickly.	54	83
I have very few headaches.	53	83
I seldom worry about my health.	53	77
I can read for a long while without tiring my eyes.	49	75
I like to be in a crowd who play jokes on one another.	49	69
I seldom or never have dizzy spells.	44	78
I have never had a fit or convulsion.	43	77
I almost never dream.	36	59
I am against giving money to beggars.	32	55
I worry over money and business.	29	63
I have never had a fainting spell.	26	49
I used to like drop the handkerchief.	24	44
I have never felt better in my life than I do now.	20	50
I drink an unusually large amount of water every day.	19	38
I liked "Alice in Wonderland" by Lewis Carroll.	16	37
In walking I am very careful to step over sidewalk cracks.	11	29
I would like to be a soldier.	11	61
I am strongly attracted by members of my own sex.	10	27
I have a great deal of stomach trouble.	4	18
Everything is turning out just like the prophets of the Bible said it would.	1	9
I think I would like the work of a librarian.	1	9

one ("a man's feet, he's sitting on something"). Five cards produced two each (Cards II, V, VII, IX, and X): Card II (two people playing "pease-porridge-hot" and "design of two people dancing"); Card V ("the hips, legs there, . . . spread out" and "couple of men lying on a hillside"); Card VII ("two old ladies looking at each other" and "a couple of dancers again, comic costume, back to back"); Card IX ("a woman giving birth there" and "the Devil having an argument with himself"); and Card X ("somebody playing pinochle" and "over here in the blue you see a woman bending down, on her hands and knees . . . looks like she's looking at the back of a man's head, who is in a reclining position, and then there's another man, and a baby, lying with his neck stretched out").

A general impression from these human-movement responses is that there is to most of them, again, a quality of *restraint:* people are working, picking up something, bending, warming themselves at a fire, or busy doing anything at all. For a few patients the action is aggressive —people are pulling against one another, pulling something apart, even fighting. By comparison with the human movement characteristic of normal individuals, there seems to be, for these convulsive patients, a higher degree of flexion, suggesting hesitancy and caution.

So far as animal movement is concerned, the convulsive patients, when compared with the control group, reported little. As conventional interpretation would have it, these patients are less infantile in their impulsiveness than are the controls. However, there is among the patients more animal than human movement.

Twenty-five patients (34 per cent) gave animal movement. Of this animal movement, 30 per cent was given for Card VIII. This would be expected in a routine group of Rorschach records, because of the provocation of animals doing something (climbing, eating, crawling, etc.) which this card has in contrast to all the other cards. These are the responses given for Card VIII by the convulsive patients:

bears trying to climb up
climbing animals
wildcat crouched, ready to spring
lizards climbing a tree
rats, or mice, climbing somewhere
two animals climbing up on something
two animals crawling along, going someplace
a couple of bugs crawling on a flower, insects
two animals probably climbing a plant
two animals creeping up
looks like a couple of bears trying to climb somewhere
two animals nibbling at a tree

Here, it is seen, there is considerable emphasis on climbing, and the *attempt* to climb.

Next to Card VIII, Card X elicited the greatest number of animal-movement responses, nine in all. These are:

two animals hiding in a tree
two deer floating . . . jump
two birds flying alon[illegible]here
caterpillars going up a tree or branch
animal, gnawing on trees
animals fighting
an antelope, on his hind legs, "on his getaway"
insects eating on a stalk
animals eating around some stains

Here the emphasis on going up, climbing, or flying is particularly impressive, but there are emphases also on eating and on escape (hiding, "getaway").

Card V evoked seven animal-movement responses, all of which involve flying or flight:

a bird, or such, flying . . . coming at you
a bird, flying
a flying butterfly
moth or butterfly in flight
a bat flies around
looks like a bat, spread out, flying through the air
a bat, in flight

For Card I (which brought forth five animal-movement responses) flight is again in evidence:

a flying animal, a bat
a flying bat
blood-sucking bat, wings spread
crawling bug of some type
a bat, in flight

Cards III and IX provided no animal-movement responses. Of the remaining cards, II gave three ("two bears standing and facing each other"; "two animals, got their noses together, straight up in the air"; and "two butterflies, in flight"). Two were elicited by Card VII ("two dancing dogs" and "two objects, with a butterfly resting its wings on them"); Card IV had one ("a serpent, coming out of a hole"), as did Card VI ("a flying squirrel").

From these animal responses we may conclude that expression is cautious and tentative. There is much flying, crawling, leaping; in other words, effort against the force of gravity which, rather than aggressive, is defensive.

Inanimate-movement responses are expressed by the convulsive patients in most abundance on Card VII. (It will be recalled that this was the achromatic figure most rejected.) There were eight such responses:

clouds, thunderhead . . . boiled up, dark
billowing smoke
looks like a ship burning, or something like that
two Indians looking at each other
smattering of a snowball, against a wall, splashed or smashed
an animal taken apart and just laid all over there
broken clouds, or chain
pair of clouds, closing down at the base

Clouds or smoke, on Card VII, are frequent responses with "normals" but this combination of diffusion with inanimate movement (suggesting free-floating anxiety) is impressive.

Card X was next in order in evoking inanimate-movement (six responses):

two spiders' stepped on
greenish chain, like you pull in older times
two worms fastened together
spiders hanging outside a tree
crabs, hanging on to some kind of animal
rabbit's head, fluid coming out of the eye-sockets

Here again, there is a striking emphasis on things suspended or falling, squashed, or otherwise subject to gravitational force.

Card II, with five inanimate-movement responses, elicits the following:

a mashed bug
an explosion, something burning, flame coming out
a crawdad, smashed out
clowns, tied together
something disfigured, mutilated

Here, for Card II, the feeling of catastrophe suffered—already accomplished—is very strong.

There were four responses utilizing inanimate movement for Card IV.

a fountain (spraying)
dark clouds, separating before thunder
animal, his eyes popping out
tree, branches bowing over

There were four also for Card IX:

something squashed
water has eaten away the land
an oil fire . . . something burning . . . a lot of heat . . .
looks like a waterfall

The remaining movement responses of an inanimate sort were: three for Card III ("a couple of animals hanging"; "black ink smeared"; and "two men, locked together") and for Card VIII ("two animals stretched out"; "a flare from an explosion"; and "a forest fire, in technicolor"); two for Card I ("a squashed beetle" and "a plane, burning up") and for Card VI ("an altar, lighted up . . . sparks coming out" and "Christ! looks like somebody took a man down,

. . . laid him open . . . his buttocks out, and left his penis hang").

Parental identification and discrimination. Within recent years, considerable attention has been given by some investigators to the differential response to individual Rorschach cards. In particular, Card IV, considered to be the masculine or "father" figure, has been compared with Card VII, the "mother" figure.

In the discussion of *control* it was shown that Card VII (the mother figure) is the most rejected card while Card IV (the father figure) is rejected much less frequently. On the basis of this finding alone, one might conclude that these convulsive subjects are more inhibited by the figure of the mother, or the feminine, than by the masculine.

We have seen that inanimate movement responses (*m*) were given most frequently for Card VII, the mother figure. Since *m* responses are regarded as revealing anxiety, we might infer that anxieties regarding the feminine role and one's relation to it are prominent in these convulsive patients. Those concerning the masculine role and figure reveal less anxiety.

A somewhat more detailed analysis of responses of these convulsive patients to Card IV in contrast to Card VII is provided by the following tabulation of the *sorts* of responses given, in terms of proportion:

PERCENTAGE OF TOTAL RESPONSES

Response	Card IV ($N=89$)	Card VII ($N=91$)
Rejection	13.5	26.4
Human Movement (*M*)	1.1	4.4
Animal Movement (*FM*)	2.2	3.3
Inanimate Movement (*m*)	4.5	11.0
Third Dimension (*k*)	4.5	13.2
Diffusion (*K*)	1.1	11.0
Pure form (*F*)	48.3	15.4
Texture (*c* and *Fc*)	14.6	5.5
Shading (*C'*)	10.1	9.9

It appears from this tabulation that convulsive patients reject Card VII more frequently than they do Card IV but they also react much more actively to Card VII in other ways: they give more movement—human (*M*), animal (*FM*), and particularly *m* (inanimate movement). They project more in the nature of third dimension (*k*) and diffusion (*K*). Pure form is much less for VII than it is for IV. Other than pure form responses, IV excels only in *c* and *Fc* (the texture responses). This suggests that these patients are, in relation to the father figure, not only repressed but *cautious and tactful* by comparison with their relation to the mother or female figure. The female figure seems to elicit an active participation, either of flat denial or of *effort*, to intellectualize or otherwise rationalize. The male figure, on the other hand, is handled in a matter-of-fact way, with caution and with kid gloves, but without excitement.

Of the few patients (twelve) who rejected the father figure, half also rejected the mother figure, and the remaining four gave *K* or *k* responses (maps, clouds, etc.).

In handling the father figure (excepting the 6 who rejected it) the 24 patients who rejected the mother figure were fairly factual, realistic, and spontaneous.

We might infer that it is fairly characteristic of the convulsive patient to reject the feminine while preserving a fairly well-integrated pattern of (impersonal) relationship with the masculine. When this pattern of masculine relationship is distorted, as it is for a few of the subjects, the feminine relationship seems also to be tenuous and anxious, but reflected in intellectualization as a method of defense, probably of long duration. The feminine image seems to force on these patients projection, intro-

spection, objectivity, detachment, and remoteness.

The self in the sexual situation. The convulsive patients gave few overt sex responses. It was noticed, however, that they frequently rejected Card VI, the "sex figure." A fourth of the patients did this, and responses for a sizable group of the remainder were characterized by features of repression and anxiety of which *F* (49 per cent) and the frequency of *C'* (black and white shading) sort of response were the chief indicators. The *C'* response was the most frequent determinant other than pure form (*F*). Characteristic responses of this sort are:

a monument, a goddess, lighting up, sparks coming out
a camouflaged gun—fur
a bear skin, sir—dark
a skinned hide—the color of it
a skin (because of color and shape)
a man laid open, buttocks out, penis hanging (and) a hide, shape, and color
a pelt—shape and color
a hide—shape and color
an X-ray—shape and color
black print of a lady—lungs

These responses are good form—in fact, the hide or pelt is a popular response. But the frequency with which the color of the figure partly determines the percept is high.

One might infer that, in the sexual situation, these convulsive patients are formal and repressive; the situation is dangerous, and they are socially ill at ease and depressed.

The Thematic Apperception productions. For purposes of tapping motivational factors in the personality of these convulsive patients, the Thematic Apperception Test was used. The stories told by the patients were scored by means of an adaptation of the technique recommended by Aron (2).

In general, the stories were brief and sterile; the typical patient was hesitant to give free rein to his imagination. Much of the content was simple description, with dynamics or action quite secondary.

For five of the pictures, stories were so stereotyped and homogeneous as to be of little use in the present analysis. Nonproductive pictures were, as Stein (20) describes them:

> *Picture 3.* On the floor against a couch is the huddled form of a boy with his head bowed in his right arm. Beside him on the floor is a revolver (20, p. 3).
> *Picture 9.* Four men in overalls are lying on the grass taking it easy (20, p. 7).
> *Picture 12.* A young man is lying on a couch with his eyes closed. Leaning over him is the gaunt form of an elderly man, his hand stretched out above the face of the reclining figure (20, p. 8).
> *Picture 14.* The silhouette of a man (or woman) against a bright window. The rest of the picture is totally black (20, p. 9).
> *Picture 17.* A naked man is clinging to a rope. He is in the act of climbing up or down (20, p. 11).

The remaining five pictures were considerably effective in eliciting material suitable for analysis. These were pictures 4, 6, 7, 13, and 18.

In order that the reader may have at least a rough norm for comparison, Stein's description of what is usually seen by the young adult male patient will be given for each picture as it is discussed here in connection with the performance of convulsive patients.

Picture 4. ("A woman is clutching the shoulders of a man whose face and body are averted as if he were trying to pull away from her.") According to Stein:

> The stories to this picture are usually concerned with a conflict situation between the couple in the foreground. The man may desire to leave the woman because he has a plan which he wishes to put into action but the woman wants to keep him with her. The conflict may be stated in general terms as an "argument" or the story may involve the "eternal triangle" with the seminude figure in the background as the man's mistress or girl friend. These stories frequently reflect the patient's difficulties in marital ad-

justment or his attitudes toward women and sex (20, p. 4).

It was characteristic of the convulsive patient not only to be sensitive to the conflict between the man and the woman in the picture, but to be aware of it intensely. He revealed himself as belonging to one of three groups, depending on which sex was finally dominant in the story: the man or the woman. It happened that of 71 patients, 27 belonged to the male dominant group and 27 to the female dominant group. Seventeen were ambivalent. Typical stores are:

(Male dominant)

Well, the man is about to do something that the girl doesn't like, apparently. . . . She's trying to keep him from going ahead and doing it. He might be mad at somebody . . . going to beat him up. It resembles a movie. . . . She's trying to restrain him. From the look in his eyes, it looks as if he's got a mind of his own.

(Female dominant)

This might have been an affair of a couple, and he's evidently gonna shove off on her or leave her, and she's evidently in anxiety that he's gonna leave and she doesn't want him to leave. From the expression . . . (Will she be successful?) I think she will. There's not quite enough expression of determination on his face.

(Ambivalent)

Well, I can see that the man is mad, and the woman is trying to soften him up. . . . Whether I can tell a story, I don't know. . . . Arguments can start over almost anything. (Will she be successful?) Well, I imagine she will, . . . they generally are . . . although I don't know. . . . He's kinda wild-eyed, stubborn. . . .

(Second illustration) Well, let's see. . . . It looks like this man has been out with another woman. I presume this is his wife here, wanting him to come back home. He's undecided. I don't know what the outcome will be.

In the light of the clear tendency for the convulsive patient to reveal his identification with the masculine, with the feminine, or both, it becomes interesting to examine any differential in response to subsequent pictures.

Picture 6. ("A short elderly woman stands with her back turned to a tall young man. The latter is looking downward with a perplexed expression.") According to Stein the scene is structured in this way by young adult males:

The elderly woman and young man in this picture are usually seen as mother and son. The son may be seen as asking his mother's permission to do something that he had planned for a long time. He may want to leave home to undertake a job in another city, to get married, or to enlist in the armed forces. His desires usually conflict with his mother's. In most stories we are also told how the conflict is resolved. These stories reflect the patient's attitude toward his mother and the factors which may have caused friction at home (20, p. 5).

Among the convulsive patients in their stories for Picture 6, aggression by the son toward the mother was expressed by 56 per cent of the male-dominant group, 37 per cent of the female-dominant group, and 29 per cent of the ambivalent group. This is a story characteristic of aggression toward the mother:

That looks like a mother and son. Evidently he's done something that his mother is disappointed in him. . . . She's acting like she doesn't want to talk to him now, but I think in the end—like a mother always does—she'll take him back.

However, mood qualities of tension or of dejection were prominent in the ambivalent group (29 per cent) and in 11 per cent of the male-dominant; this was absent in 96 per cent of the female-dominant group. In the female-dominant group it was characteristic (in comparison with the other groups) for the mother to have suffered at the hands of someone else (not the son). Also, there was a tendency for the son to be subject to aggression or dominance by the mother, quite consistent with the sort of story told for Picture 4. This dominance of mother over son also characterized many of the stories of the ambivalent group.

Picture 7. ("A gray-haired man is looking at a younger man who is sullenly staring into space.") By comparison with the mother-son picture (No. 6), the stories told for Picture 7 were in striking contrast. Stein describes, as typical of the young adult male in the service, the following as characteristic of Picture 7:

> The younger man is frequently seen as having come to the older man for advice or the two men are discussing a problem of mutual interest. These stories frequently indicate the patient's attitude toward adult males and also some of the problems about which he may be concerned. At times the stories to this picture reflect the patient's attitude toward therapy (20, p. 5).

Among the convulsive patients, there is almost no aggression on the part of the son; for all three groups (male- or female-dominant, and ambivalent) the theme is one of dominance by the father and of affiliation with the father by the son. There is, in general, an absence of the tension and dejection which characterize the stories told for the mother-son figure. Here is a typical story for Picture 7.

> Well, it looks like it may be a father advising his son—something his son is very interested in—taking it all in.

Picture 13. ("A young man is standing with downcast head buried in his arm. Behind him is the figure of a woman lying in bed.") For the normal male in the service, according to Stein, Picture 13 is treated as follows:

> Sexual plots are most frequent in the stories told to this picture. The young man is usually seen as contemplating or having had sexual intercourse with the woman on the bed. The woman may be the young man's wife, a girl friend, or a prostitute. These stories usually reveal the patient's attitude towards women and sex.
>
> Another frequent theme is that the woman lying on the bed is the young man's wife, who is either sick or dead. The young man's feelings are then described. This theme usually indicates the patient's hostile attitude towards his wife or women in general (20, p. 9).

In their stories for Picture 13, the group of patients who (for Picture 4) are female-dominant reveal least need sex: 15 per cent vs. 21 per cent for both the male-dominant and ambivalent groups. Aggression toward the woman is prominent in the female-dominant group: 44 per cent vs. 30 per cent for the male-dominant, and 15 per cent for the ambivalent group.

Illness and death to the woman resulting from actions (other than those of the hero) characterize 47 per cent of the stories of ambivalent patients, 30 per cent of those female-dominant, and 20 per cent of those male-dominant.

From the manner of dealing with Pictures 4, 6, 7, and 13, one obtains a strong impression that the convulsive patient is extremely sensitive to the possibility of conflict between the sexes. In fact, sexuality seems to be a matter of struggle—of battle—in which one or the other sex is victor. Catastrophe to the woman is a pervading theme, more characteristic of patients uncertain about sexual dominance or sensitive to female supremacy. We have, thus, some strong confirmation of the frustration-aggression hypothesis advanced by Dollard, Doob, Miller, Mowrer, and Sears (4).

Picture 18. ("A man is clutched from behind by three hands. The figures of his antagonists are invisible.") Responses to Picture 18 were of particular interest because we are dealing with the phenomenon of convulsion. The description of the picture and of stories it evokes in young adult males, according to Stein, are as follows:

> Patients are frequently concerned with their inability to develop an adequate rationale for the three hands that appear in the picture. In the common stories the man in the picture is seen as either drunk or having been in an accident and the hands belong to the people who are helping him. Or the hero is being attacked from the rear and the hands

belong to his attackers. These stories reveal the patient's anxieties concerning aggression that may be directed against him or the patient's attitude toward alcoholism or drug addiction (20, p. 11).

Within the groups of convulsive patients, there were no significant differences between subgroups divided (according to response to Picture 4) as male- or female-dominant, or ambivalent. The great majority of the stories described the central figure as experiencing "press" from outside, rather than needs within. Of these, press Aggression was most frequent (39 per cent). (The hero suffers attack by another—he is hit on the head, beaten, or robbed.) Next in order was press Nurturance. (The hero is being helped, or carried, or otherwise cared for.) This characterized 27 per cent of the stories. A third sort of press, experienced by 17 per cent, was Affliction; the hero is ill or intoxicated.

SUMMARY

In this study a group of 72 convulsive patients has been compared wherever possible with "control" subjects. This comparison has suggested that, according to the data of this study, convulsive patients differ among themselves as much as they differ from the controls (or the population generally). This is argument against the concept that the convulsive personality is unique, or that there is, indeed, a convulsive personality.

For a few variables, the convulsive group demonstrates restricted variability. These are the test performances Digits and Arithmetic on the Wechsler-Bellevue Scale of Intelligence, and the scales for *Ma* (Hypomanic tendency) and *Mf* (tendency toward interests of the opposite sex) on the Minnesota Multiphasic Personality Inventory. This relative homogeneity on the part of the convulsive patients for Digits and Arithmetic accompanies a lowered mean on these tests, something which, according to Rapaport (16), is characteristic of many patients examined at the Menninger Clinic. From this it is inferred that the convulsives, so far as mental test performance is concerned, are much like neuropsychiatric patients in general.

The mean difference of the convulsive group from the controls for MMPI *Ma* is insignificant statistically, so that this warrants no further comment. Mean deviation from the norm for *Mf* is as great, however, as that for any other variable of the MMPI. This indicates that, so far as interests are concerned, the convulsives are like the opposite sex and quite uniformly so. This is consistent with the fact that their mean profile for the MMPI is much more like that of the control females than like that of the control males.

Intellectually, the group of convulsives (with a mean IQ of 98) does not differ from the general population. However, 5 per cent perform like mental deficients; 16 per cent (including one of the "mental deficients") perform in a manner which, according to the criteria suggested by Wechsler (21), is indicative of "loss" due presumably to brain damage. (What proportion of the control or "normal" population demonstrate such loss is not shown in Wechsler's data.)

In their intellectual performances, particularly with Digits and Arithmetic, the convulsives reveal anxiety, which presumably serves to reduce in general their effectiveness in the mental test situation.

So far as ego structure, or control, is concerned, there is strong indication that, at the level of conscious operation the convulsive patients as a group are *extratensive;* they deviate from the normals more on the "neurotic" variables of the MMPI than on the "psychotic" vari-

ables; they deviate in the direction of feminine interests and personality structure as this may be indicated by the MMPI profile. Extratension is shown furthermore by the ratio of human movement to sum of color on the Rorschach, with color predominating over movement.

In looking for explanation of these phenomena in terms of dynamics, the psychological data suggest that defense against anxiety must be recognized at both the extratensive and the introversive ends of the continuum. Extratensively, these patients show immaturity in the utilization of social techniques such as tact and diplomacy (as might be suggested, for example, by texture responses on the Rorschach); they tend to preoccupation with somatic difficulties (as indicated by responses to the MMPI and particularly the Cornell Selectee Index) and feelings of personal inadequacy, verging toward neurotic depression. They are lonely people, who lack sophistication and *savoir faire,* and rely on illness and inability to justify their isolation.

On the introversive side, however, there is evidence also for a rationalizing, intellectualizing sort of defense. Many of these patients were remarkably quick to size up their current life situation as a matter of having been diagnosed by someone else as "epileptic." Rational accounting of this sort was utilized in the Rorschach situation by a tendency to "maps" and other intellective responses. It was demonstrated more conclusively by the utilization of inanimate movement instead of spontaneous human movement or the primitive, impulsive animal movement. These patients are sensitive to strong forces within themselves, but they are unwilling to accept them as their own. In the face of these promptings, they are moved, therefore, to depersonalize them, to see them as outside influences, abstract and symbolic.

Seeking further—to ask what lies behind this adjustment which seems compounded of self-doubt, self-denial, and uncertainty—the psychological data give certain motivational clues. The Rorschach protocols suggest strongly that the situations of particular threat to these convulsive patients are sexual in nature; these men tend to reject sexuality outright, to repress all spontaneity. Because complete repression is usually impossible, there breaks through an acceptance of sexuality which is realistic, but colored with a spirit of inadequacy and sadness.

Their responses to masculine and feminine figures of the Rorschach suggest further that these convulsive patients have acquired a fairly realistic and functional integration with masculine possibilities; in their man-to-man relationships they are passive, but cautious and tactful and generally at ease. Their relationship to feminine possibilities is in sharp contrast. In the heterosexual situation, the initial reaction of these convulsives is repression and active rejection. The aggression with which this rejection takes place is revealed in the active manner with which they deal with the feminine figure, through *projection.* With the feminine figure, in an atmosphere of intellectualizing and abstracting and externalizing, movement comes into the foreground. But it is not human movement which dominates the picture; it is depersonalized, inanimate movement. In the heterosexual situation these patients are not only anxious to quell their anxiety, but they feel called upon to take *action* of some sort.

These impressions of threat in the heterosexual situation are reinforced by the stories told for the TAT pictures. Here it is characteristic that man-to-man

situations are fairly relaxed, objective, and impersonal. The hero is usually passive. When women are involved, the hero is aroused, emotional, and under pressure to *do* something. While the number of patients who revealed dominance and the number who revealed submission in the heterosexual situation are equal (with a sizable group ambivalent), it was the submissive group of patients who revealed the greater aggression toward the woman, and the lesser degree of simple need sex.

The convulsive patients showed, in their TAT responses as well as in the Rorschach protocols, a high degree of sensitivity to conflict between the sexes—a battle in which one sex or the other is the victor. Very often the final result is catastrophic to the woman, though not always because of the man's behavior.

These findings suggest that the psychodynamics of *identification* with the mature masculine role is somehow distorted or off balance for many of these patients. One might ask as to their early history in terms of experience with parents. About a third of them lost at least one of their real parents before the age of sixteen, the majority of these the father (through death in nine cases and by desertion, separation, or divorce in five more). In addition to this obvious evidence of disruption to the family unit, there is evidence in many more of the histories of parental conflict, and of "nervousness" or "spells" on the part of parents, particularly the mother.

The fantasy of these patients as it is expressed in the Rorschach, and particularly the TAT, suggests strongly that they are confused about sexual roles, that they have failed in many instances to integrate within their personalities a masculine identification that is maturely effective in heterosexual relationships. They seem frustrated by the female, but they are hesitant also to express their aggression toward her directly. They attempt to dissipate this aggression, first by repression (which usually does not work), then by rationalization. Here again they are unable to achieve a satisfactory outlet, and it is in this setting that illness, attributed by the patient to forces outside himself and beyond his control, emerges in the form of "fits," which finally become completely justified for many of them by the diagnosis of "epilepsy," even though it is characteristic for the patient to want to disguise this because of its implications vocationally and socially.

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PREFACE

In the years immediately following World War II, when there was a good deal of speculation and little dependable information about the adjustment of veteran students to college, the idea of making a thorough investigation of the problem was suggested by the Carnegie Corporation. After considerable thought and discussion of the possible values of such a study and the methods of obtaining and analyzing data, the investigation described here was undertaken by the College Entrance Examination Board with the support of the Carnegie Corporation. Following the merger which led to the formation of the Educational Testing Service, the study was carried to completion by ETS.

A great many people contributed to the study in a variety of ways. It is unfortunate that acknowledgment by name cannot be made to all those people at the various colleges and universities who permitted the study to be made and who supplied the data; these people cannot be named because of the decision not to reveal the identities of the participating institutions.

Acknowledgment is due to Dr. John Dollard, President of the Carnegie Corporation, and to Dr. O. C. Carmichael, President of the Carnegie Foundation for the Advancement of Teaching, for their helpful suggestions in planning the general objectives and outlines of the study. Mr. Henry Chauncey, President of the Educational Testing Service, contributed many useful suggestions and criticized portions of the manuscript. The technical advice of Dr. Ledyard R Tucker, Professor Harold Gulliksen, and particularly Professor S. S. Wilks has been invaluable. Mrs. Judith Aronson was in charge of computing and Mr. Harry Garrison supervised the punching and tabulating operations. Mr. Donald Peterson assisted in making arrangements with the participating colleges for obtaining data. The manuscript was read by Dr. William W. Turnbull, who made many helpful suggestions.

NORMAN FREDERIKSEN
W. B. SCHRADER